Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the above-identified application.

Listing of Claims

1-35. (Canceled)

36. (**Currently amended**) An apparatus for printing holographic stereograms, comprising:

a light source configured to [[that]] produce[[s]] a coherent beam;

a beam splitter configured to [[that]] split[[s]] the coherent beam into an object beam and a reference beam;

a material holder holding a holographic recording material having elemental holograms;

an object beam unit~~, including a removable~~ comprising a first replaceable band-limited diffuser, [[for]] wherein:

the object beam unit is configured to display[[ing]] a rendered image and [[for]] to condition[[ing]] the object beam with the rendered image to interfere with the reference beam at a chosen elemental hologram, ~~wherein~~

the first replaceable ~~removable~~ band-limited diffuser comprises ~~includes~~ a deterministic phase pattern designed to diffuse light in at least one of: a specific pattern [[and]] or a specific direction, and ~~wherein~~

the first replaceable ~~removable~~ band-limited diffuser is designed for a wavelength corresponding to a wavelength of the coherent beam;

a first replaceable ~~removable~~ masking plate located in the path of the reference beam and proximate to the holographic recording material, wherein:

the first replaceable ~~removable~~ band-limited diffuser and the first replaceable ~~removable~~ masking plate form a first matched set, and

the first matched set is configured to allow exposure of a first elemental hologram of a first particular size [[hogel]];

a second replaceable band-limited diffuser;

a second replaceable masking plate, wherein:

each of the first replaceable band-limited diffuser and the first replaceable masking plate are located in respective positions such that the first replaceable band-limited diffuser can be replaced with the second replaceable band-limited diffuser and the first replaceable masking plate can be replaced with the second replaceable masking plate,

the second replaceable band-limited diffuser and the second replaceable masking plate form a second matched set, and

the second matched set is configured to allow exposure of a second elemental hologram that is at least one of:

larger than the first elemental hologram,

smaller than the first elemental hologram, or

differently shaped than the first elemental hologram; and

a computer programmed to control the interference of the object beam and the reference beam and the delivery of the rendered image to the object beam unit.

37. **(Currently amended)** An apparatus for printing holographic stereograms as in claim 36, the first replaceable ~~removable~~ masking plate having at least one positioning adjustment device.

38. **(Currently amended)** An apparatus for printing holographic stereograms, as in claim 36, the first replaceable ~~removable~~ band-limited diffuser having at least one positioning adjustment device.

39. **(Currently amended)** An apparatus for printing holographic stereograms, comprising:

a light source configured to [[that]] produce[[s]] a coherent beam;

a beam splitter configured to [[that]] split[[s]] the coherent beam into an object beam and a reference beam;

a material holder holding a holographic recording material having elemental holograms;

an object beam unit ~~for displaying~~ configured to display a rendered image and to condition ~~for conditioning~~ the object beam with the rendered image to interfere with the reference beam at a chosen elemental hologram;

a voxel-control lens located in the path of the object beam and positioned at a distance from the elemental hologram, wherein the position is based on a focal length of the voxel-control lens and a size of the elemental hologram ~~proximate to the holographic recording material, the voxel control lens being capable of varying the size of at least one voxel and being capable of making the rendered image displayed by the object beam unit as seen from the viewpoint of an elemental hologram appear at a greater apparent distance relative to the holographic recording material~~; and

a computer programmed to control the interference of the object beam and the reference beam and the delivery of the rendered image to the object beam unit.

40. **(Currently amended)** An apparatus for printing holographic stereograms as in claim 39, wherein:

the object beam unit comprises ~~includes~~ a SLM for displaying the rendered image; and

the voxel-control lens has a focal length about equal to the distance between the voxel-control lens and the SLM.

41. **(Currently amended)** An apparatus for printing holographic stereograms as in claim 39, wherein:

the object beam unit comprises ~~includes~~ a SLM for displaying the rendered image; and

the voxel-control lens has a focal length about equal to the distance between the voxel-control lens and [[the]] a projected image of the SLM.

42-56. (Canceled)

57. **(Currently amended)** A method of printing a holographic stereogram with elemental holograms, comprising the steps of:

selecting an elemental hologram;

generating a coherent light beam;

splitting the beam into an object beam and a reference beam;

rendering an image;

conditioning the object beam with the rendered image, the conditioning of the object beam comprising: ~~including the step of~~

positioning a voxel-control lens at a distance from the elemental hologram, wherein the position is based on a focal length of the voxel-control lens and a size of the elemental hologram, and

passing the object beam through [[a]] the voxel-control lens~~, the voxel-control lens being capable of varying the size of at least one voxel and being capable of making the rendered image as seen from the viewpoint of an elemental hologram appear at a greater apparent distance relative to the holographic recording material~~; and

interfering the conditioned object beam with the reference beam at the selected elemental hologram.

58-63. (Canceled)

64. **(Canceled)**

65. **(New)** The method of claim 57, wherein the voxel control lens is positioned at a location selected to change the size of at least one voxel, and to make the rendered image as seen from the viewpoint of the elemental hologram appear at a greater apparent distance relative to the holographic recording material.